

TELOCATOR



The Personal Communications Industry Association

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June 5, 1992

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Donna R. Searcy
Secretary
Federal Communications Commission
1919 M Street NW
Washington DC 20554

Federal Communications Commission
Office of the Secretary

RE: Ex parte communication on Docket No. ET 92-9

Dear Ms. Searcy:

This afternoon, Thomas Stroup, President of Telocator, and I met with Terry Haines and Robert Pepper. In that meeting, we outlined the positions Telocator will be presenting to the Commission in its comments on the "Emerging Technologies" Notice of Proposed Rulemaking. Attached is a copy of the presentation.

Sincerely yours,

Mark J. Golden
Vice President, Government Relations

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Federal Communications Commission
Office of the Secretary

Telocator PCS Section

PRESENTATION TO
THE FEDERAL COMMUNICATIONS COMMISSION

PCS Consensus Positions

June 5, 1992

Overview

- **Telocator PCS Section**
- **PCS Services Descriptions**
- **PCS Demand Estimates**
- **Emerging Technologies Docket No. 92-9**
- **Consensus PCS Regulatory Positions**
 - **Spectrum Allocation.**
 - ~ Flexibility.
 - ~ Sharing.
 - ~ Personal Telecommunications Services (PTS).
 - ~ Advanced Cordless/Wireless Business.
 - ~ Broadband Data PCS.
 - ~ Mobile Satellite Service.
 - ~ Phasing.
 - **Licensing Method.**
 - ~ Exclusions.
 - ~ Qualification Criteria.
 - ~ Licensing Procedure.
 - **Classification and Universal Service.**
 - **Standards.**
 - ~ FCC Role.
 - ~ Industry Role.

Overview *(continued)*

- **Other Telocator PCS Section Activities**
 - Technical Support to Industry and Policy Makers.
 - ~ Technical Reports and Expected Release Dates.
 - ~ Experimental License Database.
 - Market and Consumer Requirement Analysis.
 - ~ Service Descriptions for PCS Services.
 - ~ Demand Forecast for PCS Services.
 - ~ User Performance Requirements PCS Services.

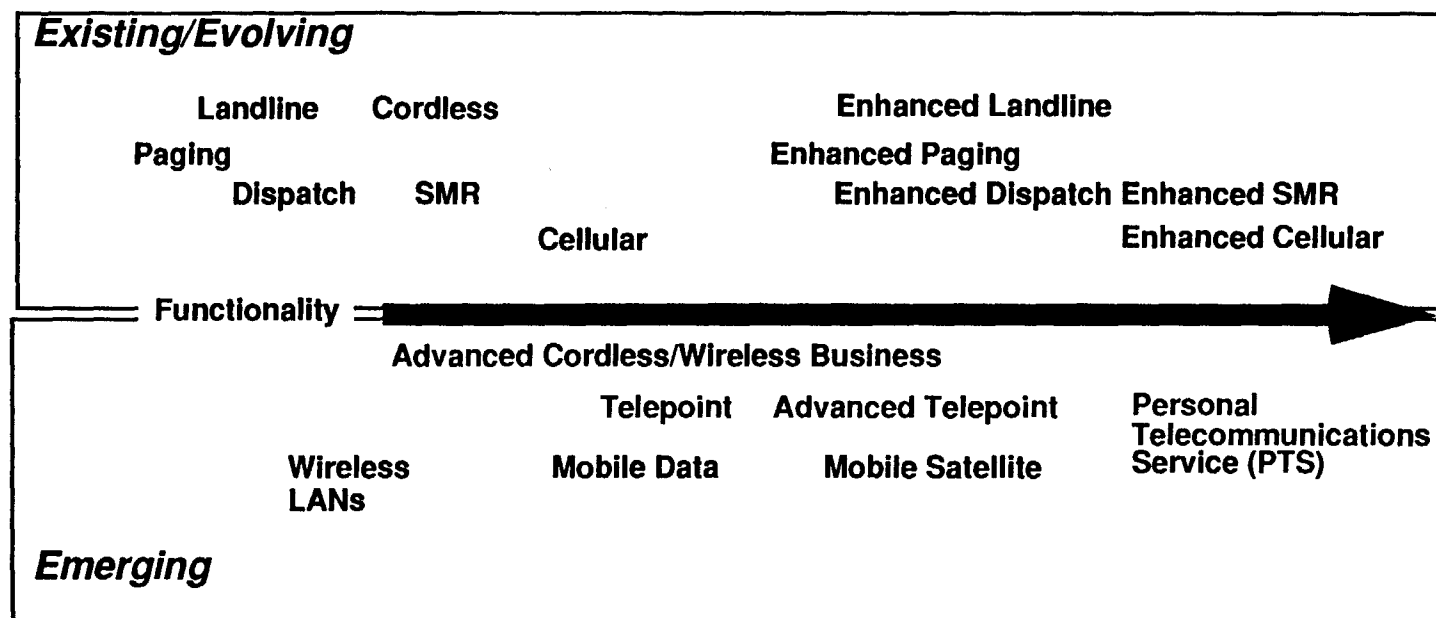
Telocator PCS Section

- **Section active since April 1991**
 - **Mission:** The purpose of this section is to foster the development of new personal communications services within the U. S. telecommunications industry.
 - **Objectives:**
 - ~ Encourage rapid evolution of regulatory decisions.
 - ~ Develop consensus policy on regulatory issues.
 - ~ Facilitate development of standards.
 - ~ Promote public interest and appreciation for PCS.
 - ~ Repository of information on domestic and international PCS activities.
- **75 participating companies representing;**
 - ~ Cellular Carriers
 - ~ Paging Carriers
 - ~ Entrepreneurs
 - ~ Local Exchange Carriers
 - ~ Interexchange Carriers
 - ~ Cable Operators
 - ~ Telecommunications and Computer Manufacturers

PCS Services Descriptions

- PCS is *"a broad range of individualized telecommunications services that enable people or devices to communicate independent of location."*
- PCS is a Family of Services
 - **Existing/Evolving** (Landline, Paging, Dispatch, SMR, and Cellular) and **Emerging** (Telepoint, Advanced Telepoint, and Personal Telecommunications Service).

PCS: A Family of Services



"No single wireless communications system will serve the needs of all users."

PCS Services Descriptions (continued)

- **Emerging PCSs Require a Spectrum Allocation**

Adv Cordless/Wireless Business	Telepoint	Adv Telepoint	PTS
Optimized for VOICE	Optimized for VOICE	Optimized for VOICE	Optimized for VOICE
High-quality Voice	Medium- to High-quality Voice	Medium- to High-quality Voice	High-quality Voice
Low- to Medium-speed Data (up to 1.44 MBPS)	Low-speed Data (up to 19.2 KBPS)	Low-speed Data (up to 19.2 KBPS)	Medium-speed Data (up to 1.44 MBPS)
Two-way Calling	One-way Calling	Two-way Calling	Two-way Calling
Discrete Coverage	Islands of Coverage	Areas of Coverage	Ubiquitous Coverage
Limited Mobility	Limited Mobility	Limited Mobility	Extensive Mobility

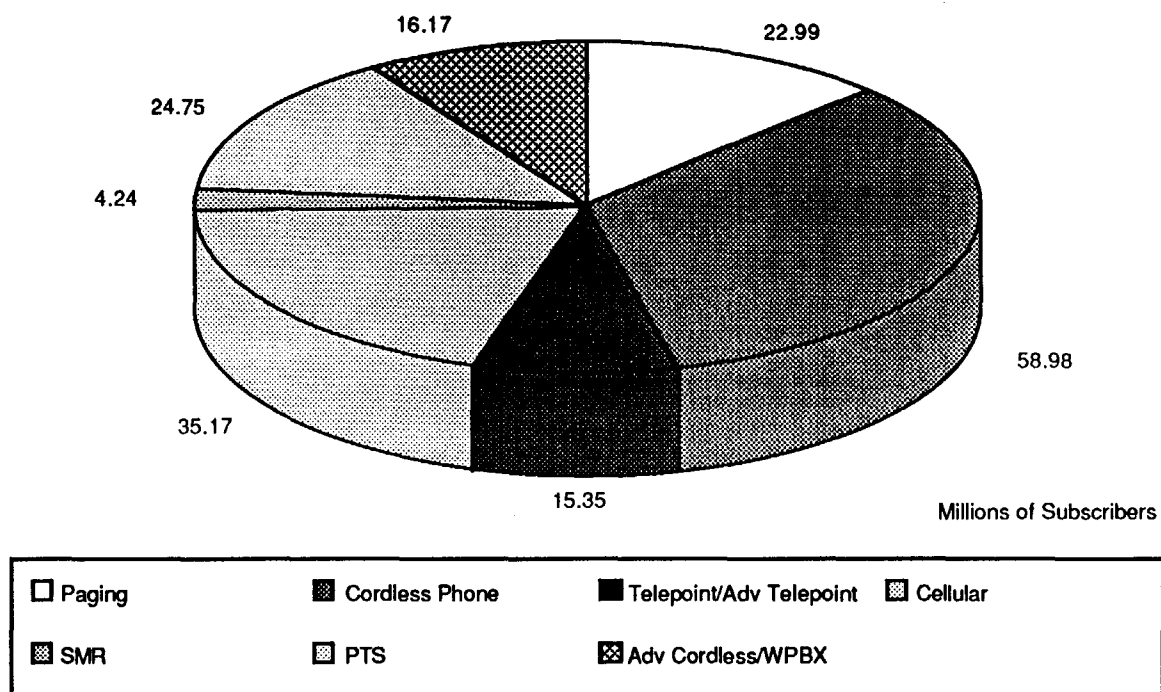
- **The Marketing and Consumer Affairs Committee is currently considering a proposal to include Wireless LANs and Mobile Data as emerging PCSs.**
- **Personal Numbering and Call Management are important elements of PCS.**

PCS Demand Estimates

- The demand survey was conducted using a "Delphi" methodology. Members submitted market size estimates based on both primary research and internal company estimates.
- Demand for Emerging PCSs is High
 - By the year 2002, there could be almost 60 million new Emerging PCS voice subscribers.

Telocator PCS Subscriber Forecasts for the Year 2002

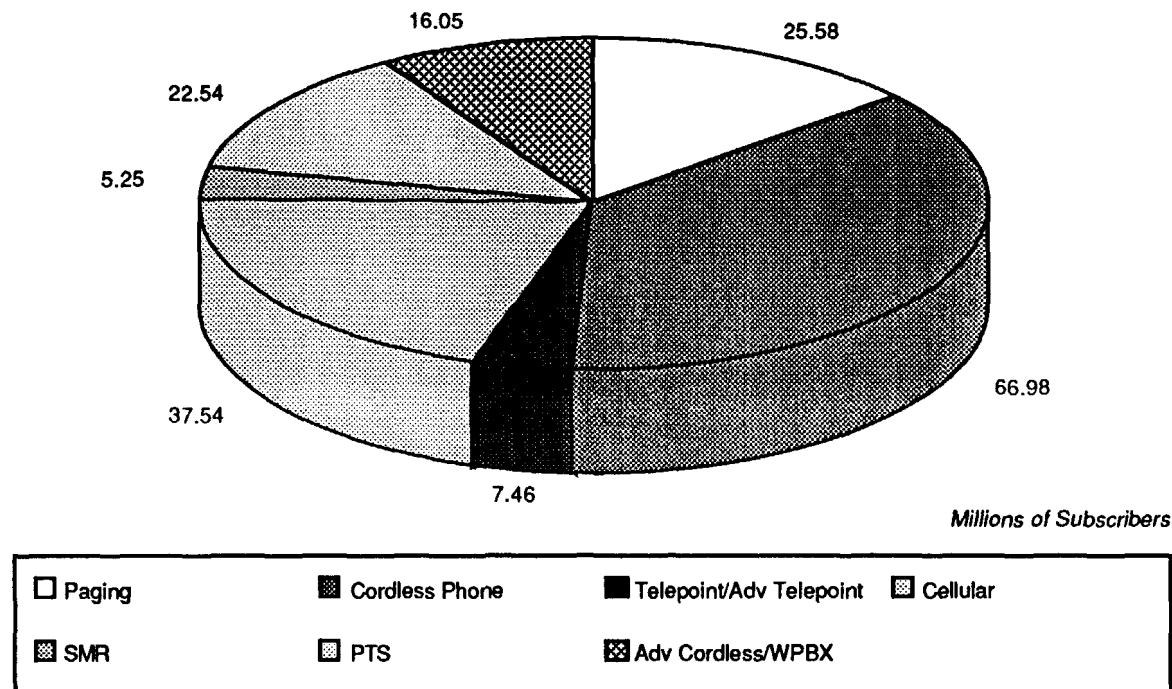
(Assuming Licensing In 1994)



PCS Demand Estimates (continued)

- If licensing is delayed by three years, there will be:
 - 7 million fewer Existing and Emerging PCS subscribers.
 - 6 million fewer Emerging PCS subscribers.
 - Higher service and equipment costs.

Telocator PCS Subscriber Forecasts for the Year 2002
(Assuming Licensing in 1997)



Emerging Technologies Docket No. 92-9

- **Comments filed June 5, 1992, with concurrence of both paging/cellular and PCS members of Telocator (paging and cellular companies are substantial users of 2 GHz microwave).**
- **Key consensus positions:**
 - **Spectrum Sharing.** Spectrum sharing is possible and with careful coordination and cooperation with microwave users is a technique for rapid implementation of PCS in the United States.
 - **Market Driven Agreements.** Microwave and "emerging technologies" licensees should be free to negotiate mutually acceptable agreements for spectrum accommodation or relocation.
 - **Transition Plan:** A transition plan should be used rather than having current users' rights expire on a certain, fixed, date as proposed in the Notice.
 - **Sliding Extensions:** If the Commission does adopt a fixed time frame for expiration of these users' co-primary status, sliding extensions of current users' co-primary status should be adopted where there is no initial interest in "emerging technologies" deployment.
 - **Safety Net.** No microwave operations will be discontinued if alternative facilities are not available that afford satisfactory technical performance.
 - **Government Spectrum:** Government spectrum at 1710-1850 MHz should be considered as a relocation destination for existing 2 GHz microwave licensees.
 - **Non-licensed Use.** Non-licensed use of spectrum raises issues warranting special consideration.
 - **Equal Treatment.** There should be equal treatment of all existing users in the "emerging technologies" band.
 - **Tax Certificates.** Tax certificates would encourage accommodation of "emerging technologies" services.

Consensus PCS Regulatory Positions - Spectrum Allocation

- **Flexibility**
 - Service providers should be granted maximum flexibility in the use of licensed spectrum.
- **Sharing**
 - Spectrum sharing is possible and with careful frequency coordination and cooperation with microwave users is a technique for rapid implementation of PCS in the United States.
 - Spectrum sharing techniques include wideband CDMA spread spectrum overlay and frequency avoidance approaches.
 - The FCC should adopt Telocator's suggestions for basic criteria (e.g., Telocator proposed revisions to TIA Technical Bulletin 10E) for sharing spectrum.
- **Personal Telecommunications Service (PTS)**
 - Telepoint, Advanced Telepoint, and PTS should be included in a single allocation.
 - PTS should be allocated spectrum in the 1850-1990 MHz band.
 - Allocations for spectrum for licensed PTS should be exclusive.
 - *Telocator Spectrum Estimates for PCS Report* presents four spectrum estimate scenarios for PTS.

Consensus PCS Regulatory Positions - Spectrum Allocation (continued)

- **Advanced Cordless/Wireless Business**

- Advanced Cordless/Wireless Business should be allocated spectrum outside of the PTS/Advanced Telepoint band but close enough to it to facilitate efficient, multi-mode handset design.
- Spectrum clearing is required for non-licensed Advanced Cordless/Wireless Business services (Part 16) to prevent interference with microwave users.
- A detailed and strict "spectral etiquette" must be employed in type-accepted equipment to prevent interference between Part 16 devices.
- The PCS Section is also considering the option of establishing a non-exclusive licensing scheme for wireless PBX equipment, intended to ensure that such equipment can operate in the same frequency bands as fixed microwave facilities without interfering with either those users or licensed wireless PBX equipment.
- *Telocator Spectrum Estimates for PCS Report* presents four spectrum estimate scenarios for Advanced Cordless/Wireless Business.

- **Broadband Data PCS**

- Broadband data (high speed, up to 10 MBPS) requires a separate frequency allocation from PCS voice and low-to-medium speed data allocations.

- **Mobile Satellite Service (MSS)**

- Spectrum sharing between MSS and PCS is not technically feasible due to the high likelihood of significant interference.
- MSS should not be allocated in the same band to be assigned to terrestrial PCS and PCS should not be allocated in the same band to be assigned to MSS.
- Terrestrial PCS should have priority over satellite-based technologies in heavily populated areas.
 - ~ MSS in a different frequency band would be appropriate in rural areas because of its larger cell coverage so long as it does not interfere with terrestrial PCS.

Consensus PCS Regulatory Positions - Spectrum Allocation (continued)

- **Phasing**

- FCC should allocate all spectrum contemplated for PTS/Advanced Telepoint, Advanced Cordless/Wireless Business at one time to facilitate efficient terminal design and forestall equipment obsolescence.
- Spectrum in the emerging technologies band not initially allocated should be reserved for future emerging technologies uses.

Consensus PCS Regulatory Positions - Licensing Method

- **Exclusions**

- All qualified applicants should be allowed to file for PCS spectrum (the definition of a qualified applicant is left to individual companies to advocate).

- **Qualification Criteria**

- Telocator encourages the strongest possible anti-speculation rules to prevent occurrence of spectrum speculation and abuses of licensing process.
- Telocator's PCS Section endorses the use of front-end qualifiers as a method of anti-speculation.
- Telocator's PCS Section does not endorse the use of post-licensing restrictions as a method for anti-speculation.

- **Licensing Procedure**

- The FCC should focus on qualified lotteries as a licensing method for PCS services as to not delay the allocation process.

Consensus PCS Regulatory Positions - Classification and Universal Service

- **Level Playing Field**

- The classification of PCS should ensure that all PCS providers are afforded a level playing field; like-services should be like-regulated.

- **Private/Common Carriage Regulations**

- Telocator supports the application of the flexible service concept contained in Telocator's Flexible Cellular Petition.
 - ~ Providers should be permitted to offer both common carrier and non-common carrier services over their assigned frequencies provided that:
 - 1.) Availability of sufficient capacity to meet needs of subscribers to the class of service for which the frequency was specifically licensed is ensured at all times.
 - 2.) All services offered comply with existing rules for that class of service.
 - ~ Providers should be regulated under the rules appropriate to the service provided.

- **Universal Service**

- PCS services are discretionary.
- Market forces should be relied upon to bring the widest availability of new services to the public in the shortest period.
- PCS can be made widely available but it is important to serve all areas efficiently as cost and demand permit without regulatory imposition of cross-subsidies.

Standards

- **FCC Role**

- The FCC should recognize the PCS standards activities and other technical work that is currently taking place in the industry.
- The FCC should focus on licensing, enforcement, equipment certification, and the adoption of standards developed by the industry.

- **Industry Role**

- Industry should address technical issues in order to develop standards and consensus decisions required to ensure viable service offerings, including but not limited to:
 - ~ Numbering.
 - ~ Common Air Interfaces for Voice and Data.
 - ~ Network Access Standards.
 - ~ Interoperability.
 - ~ Network Interconnection.
 - ~ Spectrum Interference.

- **Industry Standards Activities**

- **Telocator's Technical and Engineering Committee** is assisting and guiding standards bodies.
 - ~ Comparing existing and proposed access technologies.
 - ~ Comparing proposed spectrum sharing techniques.
 - ~ Developing reference architectures with priority recommendations for interface standards.
 - ~ Developing standards requirements documents for Uniform Service Definitions, Common Air Interface, and Network Interface Standards.
 - ~ Providing liaison to TIA TR 14 requesting revision to Technical Bulletin 10E for inclusion of PCS services technical interference requirements for coordination with fixed-point microwave users.

Standards (continued)

- **Telocator's Technical and Engineering and Marketing and Consumer Affairs Committees** are coordinating with standards bodies T1P1 and TIA TR45.4.
 - ~ Quarterly leadership meetings between Telocator , T1P1, and TIA to coordinate standards activities and advise of Telocator submissions for user performance requirements.
 - ~ Participation in industry PCS program management team.
- **ECSA's Committee T1** formed the subcommittee T1P1 to address standards issues for PCS services in 1990. Subcommittees T1E1 and T1A1 have been given standards projects of addressing PCS wireless interface and quality of service. These subcommittees are also currently pursuing the following activities.
 - ~ Developing documents and technical reports for all required PCS standards issues
 - ~ Formation of industry project management team to coordinate all PCS industry standards efforts with the first meeting of the project management team scheduled for July 1992
- **TIA's standards committee TR45** formed the subcommittee TR45.4 in 1991 to perform standards activities as requested by the industry.
 - ~ Formation of industry project management team to coordinate all PCS industry standards efforts.
 - ~ Developing standards for service descriptions.
 - ~ Developing microcell standards for cellular industry.

Other Telocator PCS Section Activities

- **Technical Support to Industry and Policy Makers**
 - Technical Reports Released.
 - ~ Technical Report on Proposed Spectrum Sharing Techniques and Feasibility (released June 3, 1992).
 - ~ Technical Report on Feasibility of Part 16 Allocation (released June 1, 1992).
 - ~ Estimates of Spectrum Required for Various PCS Applications (released June 1, 1992).
 - Experimental License Database.
 - ~ Informational database of U. S. PCS experimental and market trial results.
- **Market and Consumer Requirement Analysis**
 - Service Descriptions for PCS Services.
 - ~ PCS Services Descriptions (original released November 15, 1991).
 - ~ PCS Services Descriptions - Revision B to include service descriptions for mobile data and additional capabilities (release expected June 1992).
 - Demand Forecast for PCS Services.
 - ~ Demand Forecast for PCS Services (released May 1, 1992).
 - ~ Second Demand Forecast for PCS Services (release expected January 1993).
 - User Performance Requirements PCS Services.
 - ~ Continued analysis of U. S. and international market trials to determine PCS service customer requirements for input to standards bodies and industry.
 - ~ Analysis of consumer requirements for call management , personal mobility, and terminal mobility capabilities of PCS services.